

GRUSHKO, O.L.; SPEKTOR, Sh.Sh.

Improving sulfuric acid refining of lubricants in old installations.  
Azerb. neft. khoz. 39 no.10:36-38 0 '60. (MIRA 13:11)  
(Lubrication and lubricants)

1. REPORTING DATA / 1986 10

ACC NR: AT6024908

(A, N)

SOURCE CODE: UR/2981/66/000/004/0015/0020

AUTHOR: Grushko, O. Ye.; Novikov, I. I.; Semenov, A. Ye.

ORG: none

42  
B+1

TITLE: Hot cracking of alloys of the Al-Cu-Li-Mn system

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy  
(Heat resistant and high-strength alloys), 15-20

TOPIC TAGS: hot cracking, aluminum alloy, copper containing alloy, lithium containing alloy, manganese containing alloy, cadmium containing alloy, *CRACK PROPAGATION*

ABSTRACT: The effect of composition on the hot cracking, elongation, and linear shrinkage of alloys (in the solid-liquid state) of the systems Al-Li, Al-Cu-Li, and Al-Cu-Li-Mn, and also of VAD23 industrial alloy was studied. In the Al-Li system, the maximum hot cracking is displayed by the alloy containing 0.1% Li; on the whole, the dependence of hot cracking on composition is qualitatively the same as in other eutectic-type binary systems. In the ternary Al-Cu-Li alloys, hot cracking decreases with rising lithium content; the higher the copper content, the stronger the influence of the lithium admixture. In alloys of the quaternary system Al-Cu-Li-Mn, lithium decreases the hot cracking, but manganese increases it considerably by affecting the plasticity in the solid-liquid state. In VAD23 alloy, similar changes in the content of

Card 1/2

ACC NR: AT6024908

alloying elements (Li, Cu, Mn) have the same qualitative effect as in the other systems; an increase in the content of Mn and also Cd increases the hot cracking. It is concluded that in order to decrease spoilage due to crystallization cracks, it is necessary to try to keep the copper and lithium content close to the upper limit of the technical specifications, and the content of manganese and cadmium, close to the lower limit. Orig. art. has: 5 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 006

*na*  
Card 2/2

I. 146988-66. EWT(m)/EWT(t)/ETI IJP(c) JD/JT

ACC NR: AT6024909

(A, N)

SOURCE CODE: UR/2981/66/000/004/0021/0025

AUTHOR: Zal'tsman, I. Ya.; Grushko, O. Ye.; Semenov, A. Ye.; Zasyukin, V. A.;  
Vinokurov, N. D.; Kryukov, M. A.; Ievstyugin, A. P.; Bozhenok, I. V.

38  
B+1

ORG: none

TITLE: Some aspects of the preparation of VAD23 alloy

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharoprochnyye i vysokoprochnyye splavy  
(Heat resistant and high-strength alloys), 21-25

TOPIC TAGS: aluminum alloy, copper containing alloy, lithium containing alloy, manga-  
nese containing alloy, cadmium containing alloy / VAD23 alloy

ABSTRACT: VAD23 alloy belongs to alloys of the Al-Cu-Li system with small admixtures of Mn and Cd. Because of the loss of lithium from the melt during the preparation of this alloy, the introduction of lithium (and cadmium) was carried out under a special flux consisting of a eutectic mixture of lithium and potassium chlorides. This flux was found to prevent the loss of lithium to a considerable extent; however, as the lithium content of the alloy increases, this protection becomes less effective. Particular attention must be paid to the quality of preparation of the flux and to the manner in which lithium is introduced into the melt (without disturbing the flux). The flux has the disadvantage of being hygroscopic because of the LiCl present in its composition, and therefore must be used only in the liquid or freshly-remelted state, the

Card 1/2

L 46988-66

ACC NR: AT6024909

liquid state being preferred. Refining of the alloy with gaseous chlorine after the addition of lithium insures the required purity of the ingots. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 001/ OTH REF: 001

Card 2/2

I. 46987-66 EXP(k)/EXP(m)/EXP(l)/MTI TJP(c) JH/JD

ACC NR: AT6024910

(A, N)

SOURCE CODE: UR/2981/66/000/004/0026/0031

AUTHOR: Grushko, O. Ye.; Zal'tsman, I. Ya.; Vinokurov, N. D.; Semenov, A. Ye.;  
Zasyupkin, V. A.; Kryukov, M. A.; Yevstyugin, A. P.; Bozhenok, I. V.

ORG: none

40  
B+1

TITLE: Process of casting VAD23-alloy ingots

SOURCE: Alyuminiyevyye splavy, no. 4, 1966. Zharkoprochnyye i vysokoprochnyye splavy  
(Heat resistant and high-strength alloys), 26-31

TOPIC TAGS: metal casting, lithium containing alloy, aluminum alloy, copper containing alloy/VAD23 aluminum alloy 27

ABSTRACT: In elaborating a process for casting ingots from VAD23 alloy by the continuous method, the authors studied the casting properties (tendency to form hot and cold cracks) of this alloy, established the temperature conditions of the casting, and determined the methods of protecting the metal during transit from the mixer to the crystallizer and in the crystallizer. The chemical activity of lithium, which enters into the composition of the alloy, made it necessary to protect the alloy surface during transit. Two methods were tested for this purpose, involving the use of (1) sulfur dioxide and (2) a flux consisting of a eutectic mixture of lithium and potassium chlorides. Only the latter method gave satisfactory results. A temperature of 700-730°C was found to be optimal for casting. The quality of the ingots obtained was thoroughly

Card 1/2

L 46987-66

ACC NR: AT6024910

checked by analyzing the structure of fractures, microstructure, density, liquation, and mechanical properties along the length and cross section of the ingot in the longitudinal and trasverse directions. The elaborated casting process, which includes protection of the metal with a liquid flux on the path from the mixer to the crystallizer, produced good-quality ingots. Orig. art. has: 3 figures and 1 table.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 002

Card 2/2

GRUSHKO, P. (g. Izhevsk)

On whom does the economy of technology depend? Sots.trud. no.5:  
91-92 My '56. (MLRA 9:8)  
(Production standards)



GRUSHKO, S.; SHCHETININA, Ye., red.; POLEVAYA, Ye., tekhn. red.

[Climate and weather]Klimat i pogoda. Kishinev, Kartia moldo-  
veniaske, 1961. 85 p. (MIRA 16:3)  
(Climatology)

GRUSHKO, S. S.

Natural and economic resources and the fundamental trends in the agriculture of the region and the republic Kishinev, Gos. izd-vo Moldavii, 1951.  
58 p. (V pomoshch' agrotekhnicheskim trekhletnim kursam. 1st, tema 4)

GRUSHKO, T. E.

Mineral of the palygorskite group from the Solikamsk beds in the Kungursk complex of the northern Sub-Ural. T. E. Gerasimov, T. E. Grushko, and P. N. Chirvinskii. *Zapiski Vsesoyuz. Mineral. Obshchestva* (Mém. soc. russe minéral.) 78, No. 2, 95-100 (1949). Palygorskite is observed as an asbestoslike fibrous vein mineral occurring in partly dense, partly porous, or cellular limestones and dolomites. The fibers may have lengths up to 7 cm. and are perpendicular to the walls. The limestones and dolomites are assoc. with anhydrite and mixed anhydrite-dolomite rocks. The birefringence of the palygorskite is about  $\gamma = 0.020$ ,  $\beta = 0.008$ ; the elongation of the fibers is pos. The  $n_s$  are 1.500-1.515. The needle-shaped crystals show an excellent pinacoidal cleavage (100) and are therefore easily reduced to single fibers.

They are partly water clear, partly brown-colored by Fe hydroxide ("xylolite"), with a weak pleochroism, and rather heterogeneous. The angle  $2V$  is probably small, the axial plane is oriented in the length direction. Symmetry is probably orthorhombic. The mineral is easily colored by methylene blue with a vivid pleochroism. Chem. analysis of the accompanying carbonate rocks shows that most of the MgO of dolomite migrated to the palygorskite, the compn. of which is  $\text{SiO}_2$  38.48,  $\text{Al}_2\text{O}_3$  0.57,  $\text{Fe}_2\text{O}_3$  1.72,  $\text{CaO}$  18.86,  $\text{MgO}$  18.36,  $\text{CO}_2$  0.57 (as  $\text{CaCO}_3$ ),  $\text{H}_2\text{O}^+$  6.83,  $\text{H}_2\text{O}^-$  6.26 total ignition loss 22.90%. If the mineral is treated with 6% acetic acid and 2% HCl for 2 hrs., the compn. is  $\text{MgO}$  28.0, 21.1, but this formula is not that of palygorskite but of a "para-sepiolite". Density after acid treatment is at  $d_4^{20} = 2.05$ . Evidently, the palygorskite is partly decompd. by extn. of  $\text{CaO}$  and  $\text{MgO}$  even by a mild acid treatment. The particularly low  $\text{Al}_2\text{O}_3$  and  $\text{Fe}_2\text{O}_3$  content of the mineral may be responsible for this low stability. W. Eitel

GRUSHKO, V.A.

Our suggestions and recommendations. Elek. i topl. tiaga 3  
no.3:27-28 Mr '59. (MIRA 12:5)

1. Nachal'nik depo "Okt'yabr'" Makeyevskogo metallurgicheskogo  
zavoda.

(Diesel locomotives)

L 11150-07 EWP(k)/EWP(h)/EWP(j)/EWP(l)/EWP(v)

ACC NR: AP6034637

SOURCE CODE: UR/0102/66/000/004/0003/0007

AUTHOR: Hrushko, V. L. -- Grushko, V. L. (Dnipropetrovs'k); Chernyshov, O. N. -- Chernyshev, A. N. (Dnipropetrovs'k)

ORG: none

TITLE: Synthesis of an automatic-control system with nonlinear feedback which provides stable transmission of given transient response

SOURCE: Avtomatyka, no. 4, 1966, 3-7

TOPIC TAGS: servosystem, electronic amplifier, automatic control, nonlinear feedback, transient response

ABSTRACT: The authors propose a unit with a nonlinear functional converter  $F(x_{out})$  in the primary feedback circuit for stable transmission of a given transient response in a closed loop of a nonlinear servosystem under fixed initial conditions and possible disturbances. A method is described for determining the characteristics of the functional converter with the aid of an inverse open-loop electronic model. Data are supplied for designing the inverse model and for a method of approximating nonlinear characteristics of elements of the automatic-

Card 1/2

L 11150-07

ACC NR: AP6034637

APPROVED FOR RELEASE: 08/10/2001

CIA-RDP86-00513R000617120013-0"

control system by smooth curves. The paper includes results for the synthesis of nonlinearity of the  $F(x_{out})$ , and investigations of transient response stability under the effect of disturbances in a servosystem designed with the Leonard circuit with an amplidyne and electronic amplifiers. The research was carried out at the Dnepropetrovsk Institute of Metallurgy. Orig. art. has: 5 figures and 7 formulas. [Based on authors' abstract]

SUB CODE: 13/ SUBM DATE: 21Mar66/ORIG REF: 003/

Card 2/2 mcl

L 07992-67 EWP(k)/EWT(m)/EWP(t)/ETI IJP(c) JD/HW  
ACC NR: A17001666 SOURCE CODE: UR/0144/66/000/006/0656/0662

AUTHOR: Lur'ye, Z. Ya.; Timovskiy, A. K.; Grushko, V. L.

ORC: none

TITLE: Electron model investigation of automated multi-motor electric drive for device for cross cutting rolled steel

SOURCE: IVUZ. Elektromekhanika, no. 6, 1966, 656-662

TOPIC TAGS: metal cutting, automation, nonlinear differential equation

ABSTRACT: The transient processes in an automated system for periodic cutting of continually rolled sheet into lengths are described by complex non-linear differential equations. Due to the difficulty of solution of the equations, the investigation of the dynamics of such systems is often performed using mathematical modeling with continuous-operation electronic machines. This article analysis problems in the investigation of a multi-motor electric drives for such an apparatus using an electronic model. Practical recommendations are presented relative to methods of investigation in consideration of the peculiarities of the technological processes involved. The electron model investigations performed allowed the authors to suggest the following method of investigation:

- 1) Clarification of the structure of the speed control of the temper

Card 1/2

UDC: 621.34+621.771

L 07992-67  
ACC NR: AP7001666

0

mill;

2) Determination of the structure of the compensation units and dynamic components of the stress;

3) Determination of the parameters and correcting links for the automatic control units in loops providing the required static accuracy, stability and quality of the transient process;

4) Clarification of the parameters involved in combined operation of the entire control system. The control system developed has been in operation since 1963. Orig. art. has: 5 figures and 10 formulas. [JPRS: 37,811]

SUB CODE: 13, 12 / SUBM DATE: 30Apr65 / ORIG REF: 006

Card 2/2 *98*

Malinik, V. I., (Engr)

Dissertation: "Theoretical and Experimental Determination of Settling Rates of Certain Construction Materials." Cand Tech Sci, Moscow Order of Labor Red Banner Engineering Construction Inst imeni V. V. Kuybyshev, 8 Jun 54. Vechernyaya Moskva, Moscow, 28 May 54.

SO: SUM 284, 26 Nov 1954



GRUSHKO, V.M., kand.tekhn.nauk, ispolnyayushchiy obyazannosti dotsenta.

Determining the initial temperature of plates in the first  
quarter of their thickness. Trudy RISI no.4:181-192 '55.  
(MIRA 12:1)

(Heat--Transmission)

(Concrete slabs)

GRUSHKO, V.M., kand.tekhn.nauk, dots.

Moisture balance of exterior walls with ventilating interlayers.

Trudy RISI no.9:42-55 '57.

(MIRA 12:11)

(Walls)

(Dampness in buildings)

GRUSHKO, V.M., dotsent, kand. tekhn. nauk

Thermal principles involved in selecting designs of walls and roofs  
for large-block cow barns. Trudy RISI no.6:79-94 '58.

(MIRA 12:6)

(Dairy barns) (Heat (Insulation))

ORLOVSKIY, Z.E., kand.tekhn.nauk; GRUSHKO, V.M., kand.tekhn.nauk; VOLKOVSKIY,  
N.N. inzh.

Reconstruction of steam-curing chambers. Bet.i zhel.-bet. no.12:  
563-564 D '60. (MIRA 13:11)  
(Autoclaves)

GRUSHKO, YA. M.

USSR/Medicine - Environment  
Medicine - Hygiene and Sanitation

Jun 48

"Studies of the Effects of External Factors on Man,"  
Ya. M. Grushko, Chair of Community Hygiene, Irkutsk  
Med Inst, 5 pp

"Gig i San" No 6

Reviews progress of subject study in USSR. Dis-  
cusses research methods.

14/49T43

1ST AND 2ND ORDER										3RD AND 4TH ORDER									
PROCESSES AND PROPERTIES INDEX																			
<p>ca</p> <p>Chromium as a biodelement. Ya. M. Grushko (Irkutsk Med. Inst., Russia). <i>Biokhimiya</i> 13:124-6(1948).—Cr is a const. constituent of man, animals, and plants. As analyzed by the spectroscope, the Cr content in man is, in mg. %, on a wet basis, for hair 0.2, nail 0.12, bile 0.08, heart 0.01, brain 0.002, muscle 0.0002, blood 0.0035.</p> <p>Flour contains 0.18 mg. % Cr, bread 0.09, cabbage 0.03, carrots 0.01, powdered eggs 0.003. The Cr content in well water ranges from 0.0009 to 0.002 mg. per l. and for river water (Siberia) from 0.0011 to 0.0017 mg. per l.</p> <p>H. Priestley</p>																			
<p>11 F</p>																			
<p>ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION</p>																			
FROM 1ST ORDER										FROM 2ND ORDER									
FROM 3RD ORDER										FROM 4TH ORDER									

GA

14

Toxic substances in the drinking waters of Irkutsk from spectral analyses. Ya. M. Grushko and S. A. Shipitsyn (Irkutsk Med. Inst.). *Gigiena i Sanit.* 13, No. 5, 1-11 (1948).—The amts. of Cr, Ni, Pb, Ba, Sr, Cu, and Mn in the rivers are lower than the data published for American water sources. In underground waters, the concns. are higher than in rivers. In artesian wells, a particularly high amt. of Ba (0.23 mg./l.) was found. The concns. of Mn are by 0.53 mg./l. higher than is permissible.

N. Thon

USSR/Medicine - Water Purification Apr 49  
Medicine - Industry and Occupations

"Drainage of Hydrolysis Plants and Maintenance of  
Sanitary Reservoirs," Ya. M. Grushko, Irkutsk  
Oblast Sanitation-Epidemiol Sta, 3 pp

"Gig 1 San" No 4

PA 56/49182  
Drainage of hydrolysis plants pollutes reservoirs  
with its large content of organic and mineral  
materials, especially malt grains, bottoms, lignin  
and furfurole. Draining of lignin and bottoms  
into reservoirs not only is unsanitary but also  
a loss of industrially useful products. Some

56/49182

USSR/Medicine - Water Purification (Contd) Apr 49

organic materials in malt grains can be used for  
making yeast, and furfurole is highly toxic and a  
valuable product. Suggests that methods be evolved  
for maximum recovery of these products by hydrolysis  
plants to prevent pollution and loss of usable  
products.

GRUSHKO, Ya. M.

56/49182



12A

1-1

Toxic substances and the method of establishing hygienic standards for their permissible concentration in water reservoirs. Ya. M. Grushko. *Gigiena i Sanit* 1949, No. 7, 11-15. The principles for establishment of toxicity levels of toxic substances in drinking water are discussed. A specific case of  $Cr^{6+}$  is discussed, passing from data of its normal content in human organs, to its stability in water at various pH values, its elimination after intake, taste threshold, and finally animal experiments. Effects of prolonged intake of small amounts. *Daphnia* is killed by 0.05 mg./l. concn. of  $Cr^{6+}$  in 6 days. General conditions which govern possible variation of permissible concns. of toxic materials under different circumstances are mentioned. G. M. Kozolupov

458 554 METALLURGICAL LITERATURE CLASSIFICATION

14

CA

Toxic action of hexivalent chromium on microorgan-  
isms. Ya. M. Grushko (Irkutsk Med. Inst.), *Trigonomet-*  
*Scrit.* 1950, No. 2, 17-19. Tests with diluted sewage water  
showed that compounds of hexivalent Cr ( $K_2Cr_2O_7$ ) and

chromic anhydride) are toxic to microflora at concen-  
trations above 0.01 mg./l. At lower concns. a stimulating effect  
is observed. The effect is noticeable within a few hrs.  
but is most pronounced after 1 day or longer. For  
*Aerobacter aerogenes*  $K_2Cr_2O_7$  and chromic anhydride are  
toxic at above 0.001 mg./l.  $K_2Cr_2O_7$  is toxic only above  
0.01 mg./l. For *B. coli* and *B. paratyphi* chromic an-  
hydride is toxic above 0.01 mg./l. and somewhat effective  
at 0.001 mg./l. G. M. Kosolovskii

A

Toxic substances in drain waters of metal-working concerns and the sanitary protection of water reservoirs. *Va. M. Gerasimov (Irkutsk Med. Inst.). Gigiena i Sanit. 1950, No. 6: 9-12.* Preliminary investigations of waste liquors from metal-plating plants are discussed, including the finding of cyanides, Cr, Cd, Pb, Cu, Zn, and Ni. The need for a scientific establishment of permissible minima is stressed, along with the criticism of the U.S. recommendations for such metals as Zn and Cr, which are said to be set at much too high levels to be safe in continued exposure. G. M. Kosolapoff

CA

112

Dept. Gen. Hygiene +  
Pathological Anatomy

Toxicity of drinking water containing cadmium salts  
Ya. M. Grushko, V. A. Donskov, and V. S. Kolesnik  
(Irkutsk Med. Inst.). *Gigiena i Sanit.* 1951, No. 9, 22-6.  
Cd is toxic when fed with drinking water to rabbits for 3-6  
months. At 100 mg./l. degenerative changes take place in  
internal organs. At 0.1 mg./l. the changes are largely  
located in the kidneys where tubular epithelium is swollen;  
0.01 mg./l. concn. showed no ill effects. G. M. K.

1. GRUSUKO, Ya. M.
2. USSR (600)
4. Mendeleev, Dmitrii Ivanovich, 1834-1907
7. Public health in the works of D. I. Mendeleev. Sov.zdrav. 11 no. 6, 1952.

9. Monthly Lists of Russian Accessions, Library of Congress, March 1953, Unclassified.

GRUSHKO, Ya.M.; DONSKOV, V.A.; KOLESNIK, V.S.

Toxicity of nickel. Farm. i toks. 16 no.2:47-49 Mr-Apr '53. (MLRA 6:6)

1. Irkutskiy meditsinskiy institut.

(Nickel--Toxicology)

GRUSHKO, Ya. M.

Chemical Abst.  
Vol. 48 No. 8  
Apr. 25, 1954  
Biological Chemistry

1 Toxicity of hexivalent chromium given via the alimentary tract. Ya. M. Grushko (Med. Inst., Irkutsk). Farmakol. i Toksikol. 16, No. 5, 53-60 (1953).—The min. toxic dose of  $\text{Cr}^{6+}$  (rabbits, as  $\text{K}_2\text{Cr}_2\text{O}_7$  or  $\text{K}_2\text{Cr}_2\text{O}_7$  in food or water) is 0.0003 mg./kg. for chronic poisoning (frequency not stated). Acute poisoning, 0.0013 to 0.003 mg./kg., shows pathol. changes in the cerebral cortex, cardiac muscle, liver, and kidneys. Julian F. Smith

1. LEVSHKO, YA. M.
2. USSR 600
4. Scientists
7. D. I. Mendeleev's ideas on the transformation of nature, Priroda, 42, No. 2, 1953.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.



1954, No. 1.

ORU HKO, Ya. M. -- "Materials Concerning the Problem of Hygienic Standardization of the Maximum Permissible Concentration of Hexavalent Chromium in Water for Drinking."  
\* (Dissertation for Degree in Science and Engineering Submitted at the Higher Educational Institutions.) Kazan State Medical Inst, Kazan, 1954.

SO: Knizhnaya Letopis', No. 15, 10 Jan '55

\* For Degree of Doctor of Medical Sciences

GRUSHKO, Ya. M.

Work experience of the department of hygiene in connection with utilization of virgin and idle lands. Gig. i san. no.12:37-40 D '54.

1. Iz Irkutskogo meditsinskogo instituta.

(INDUSTRIAL HYGIENE

agriculture, utilization of virgin soil & fallow ground, protective measures, work of department of hygiene, in Russia)

(AGRICULTURE

in Russia, virgin soil & fallow ground utilization, hygienic measures)

GRUSHKO, Y. A. M.

Effects of copper, nickel, cadmium, and hexavalent chromium at low concentrations on ascorbic acid. Y. A. M. Grushko (Med. Inst., Irkutsk). *Parmaol. i Toksikol.* 1954, 3(1954).—Oxidation of ascorbic acid in physiol. salt soln. is perceptibly accelerated by  $\text{Cu}^{++}$  at 0.01 mg./l., strongly at 0.1 mg./l.; perceptibly by  $\text{Cd}^{++}$  at 0.1 mg./l.; perceptibly by  $\text{Ni}^{++}$  and Cr (VI) at 0.1 and strongly at 1 mg./l. Sulfates were used. Pollution of air or water by compds. of these metals may cause hypovitaminosis C.  
Julian P. Smith

GRUSHKO, Ya.M. (Irkutsk)

D.I.Mendeleev and medical science. Sov. med. 18 no.11:44-46 N 154.

(MEDICINE

(MLRA 7:12)

contribution of D.I.Mendeleev)

(MENDELEEV, DMITRII IVANOVICH, 1834-1907)

AID P - 2631

Subject : USSR/Medicine

Card 1/1 Pub. 37 - 8/22

Author : Grushko, Ya. M., Dr. Med. Sci.

Title : A. I. Voyeykov, founder of Russian climatology, and the importance of his work for hygiene

Periodical : Gig. i san., 8, 31-35, Ag 1955

Abstract : A review of the works by A. I. Voyeykov (1842-1916), in which special attention is given to the effect of climate, microclimate, and geographical and meteorological conditions on the human organism, as well as to problems of the control of nature by man. The eminent hygienists F. F. ~~Bri~~man and G. V. Khlopin refer to Voyeykov in their textbooks on hygiene. It is recommended that every hygienist and sanitary inspector become well acquainted with Voyeykov's work. 7 refs., 1909-1953.

Institution : Irkutsk Medical Institute

Submitted : F 12, 1954

GRUSHKO, Ya.M.

Activities of D.I.Mendeleev in the field of toxicology. Farm. i  
toks. 19 no.2:53-57 Mr-Apr '56. (MLRA 9:7)

(MENDELEEV, DMITRII IVANOVICH, 1834-1907)

(PHARMACOLOGY, history

contribution of D.I.Mendeleev (Rus))

GRUSHKO, Ya. M.

1  
The chromium balance in the organism of experimentally  
poisoned test animals. Ya. M. Grushko (Med. Inst.,  
Irkutsk). *Farmakol. i Toksikol.* 19, No. 4, 48-53 (1956).  
Chronic subtoxic dosage of rabbits with chromates or di-  
chromates (135-225 days) showed that accumulation in  
organs and tissues in toxic ants. begins at a concn. of 5  
mg./l. in the drinking water, or dose 0.06 mg./kg., before  
pathological symptoms appear. Julian P. Smith

GRUSHKO, Ya.M., prof.

D.I.Mendeleev and medicine. Sov.med. 21 no.8:139-143 Ag '57.  
(MIRA 10:12)

1. Iz Irkutского meditsinskogo instituta.  
(MENDELEEV, DMITRII IVANOVICH, 1834-1907)



EXCERPTA MEDICA Sec 17 Vol 5/1 Public Health Jan 59

269. COMPARATIVE INVESTIGATIONS OF AIR POLLUTION WITH A CARCINO-  
GENIC SUBSTANCE (3:4-BENZOPYRENE) IN IRKUTSK AND ANGARSK  
(Russian text) - Grushko Ya. M., Dikon P. P., Shabad L. M.,  
Rukavishnikova T. I., Zak L. M. and Vlasenko O. M. -  
GIGI SAN. 1958, 4 (7-10) Tables 2

A spectral fluorescent examination was made of samples of snow taken in various districts of 2 industrial towns (Irkutsk and Angarsk) in eastern Siberia. Angarsk is a new town, where the residential districts are separated from the industrial plants by a protective zone of vegetation; besides all the houses have central heating. The possibility of pollution of the atmospheric air with smoke in Angarsk is reduced to a minimum. The amount of 3:4-benzopyrene in the atmospheric air in Irkutsk is about the same as in other old industrial towns. However, in Angarsk there is less 3:4-benzopyrene in the atmospheric air even in the industrial districts and no trace of it has been detected in the central residential district.

GRUSHKO, Ya.M., prof.

D.I. Mendeleev's correspondence with figures in Russian medicine.  
Vrach.delo no.10:1097-1089 0'58 (MIRA 11:11)

1. Irkutskiy meditsinskiy institut.  
(MENDELEEV, DMITRII IVANOVICH, 1834-1907)  
(MEDICINE)

GRUSHKO, Ya.M.

"Some facts on the prevalence of silicosis in the United States".  
(from "Archives of industrial health," 14 no.4: 0'56) by T.Victoria.  
Reviewed by I.A.M. Grushko. Gig.truda i prof. zab. 2 no.5:60-61  
S-0 '58 (MIRA 11:11)

(UNITED STATES---LUNGS---DUST DISEASES)

(VICTORIA, T.)

GRUSHKO, Ya.M. (Irkutsk)

Activities of D.I.Mendeleev in the field of nutritional hygiene.  
Vopr.pit.17 no.1:87-89 Jan '58. (MIRA 11:4)

(NUTRITION,

contribution of D.I.Mendeleev (Rus))

(MENDELEEV, DMITRII IVANOVICH, 1834-1907)

GRUSHKO, Yg.M.; DIKUN, P.P.; SHABAD, L.M.; RUKAVISHNIKOVA, T.I.; ZAK, L.M.;  
VLASENKO, O.M.

Comparative study of air contamination by a cancerogenic substance  
(3,4-benzopyrene) in Irkutsk and Angarsk [with summary in English].  
Gig. i san. 23 no.4:7-10 Ap '58. (MIRA 11:6)

1. Iz kafedry obshchey gigiyeny Irkutskogo meditsinskogo instituta,  
laboratorii eksperimental'noy onkologii Instituta onkologii AMN  
SSSR, Irkutskoy oblastnoy sanitarno-epidemiologicheskoy stantsii i  
Irkutskogo energeticheskogo upravleniya.

(AIR POLLUTION, determ.

by 3,4 benzopyrene in sampling of snow flakes (Rus))

(BENZOPYRENES, determ.

3,4 benzopyrene in sampling of snow flakes in air  
pollution determ. (Rus))

GRUSHKO, YA. M.

"Hygienic Problems in the Construction of the Angarsk  
Hydroelectric Power Station in Irkutsk."

report submitted at the 13th All-Union Congress of Hygienists, Epidemiologists  
and Infectionists, 1959.

GRUSHKO, Ya.M. (Irkutsk, ul. Dzerzhinskogo, d.29, kv. 2)

Lung cancer and its prevention. Vop.onk. 5 no.5:624-633 '59.

(MIRA 12:12)

1. Iz kafedry obshchey gigiyeny Irkutskogo meditsinskogo instituta.  
(LUNG NEOPLASMS, prev. & control  
review (Rus))

GRUSHKO, Ya.M., prof.

"Fluorine and its hygienic significance" by R.D. Gabovich. Reviewed  
by IA.M. Grushko. Stomatologiya 38 no.5:80-81 S-O '59.

(MIRA 13:3)

(GABOVICH, R.D.) (FLUORINE--PHYSIOLOGICAL EFFECT)





GRUSHKO, Ya.M.

Chromium as a carcinogenic substance. Vop. onk. 7 no. 1:100-108  
'61. (MIRA 14:2)  
(CARCINOGENS) (CHROMIUM-TOXICOLOGY)

GRUSHKO, Ya., prof.

Preserve the wonder of nature. NTO 4 no.9:38-41 S '62.

(MIRA 16:1)

1. Predsedatel' komiteta po ispol'zovaniyu i okhrane vodnykh  
resursov pri Irkutskom oblastnom sovete nauchno-tehnicheskikh  
obshchestv.

(Baikal, Lake)

GRUSHKO, Ya.M., prof. (Irkutsk)

Longevity among the population of Eastern Siberia. Sov. zdrav.  
21 no.3:48-51 '62. (MIRA 15:3)

1. Iz kafedry obshchey gigiyeny Irkutskogo meditsinskogo  
instituta.

(SIBERIA, ~~EASTERN~~—LONGEVITY)

GRUSHKO, Ya.M., prof. (Irkutsk)

"Methods of hygiene research" by A.A. Minkh. Reviewed by I.A.M.  
Grushko. Sov.med. 26 no.12:129-130 D '62. (MIRA 1632)  
(HYGIENE—RESEARCH) (MINKH, A.A.)

GRUSHKO, Ya.M., doktor med.nauk (Irkutsk)

"Hydrochemistry of Lake Baikal" by K.K. Votiktsev. Reviewed by  
Ia.M. Grushko. Priroda 51 no.6:36 Je '62. (MIRA 15:6)  
Baikal, Lake--Water--Composition)  
(Votintsev, K.K.)

GRUSHKO, Ya.M. (Irkutsk)

Review of the collection of abstracts for 1960: "Industrial  
hygiene and occupational diseases in Czechoslovakia." Gig.  
truda i prof. zab. 7 no.1:59-60 Ja'63 (MIRA 16:12)

GRUSHKO, Ya.M., prof.

Occupational poisoning and diseases caused by chromium; survey of literature. Sovet. med. 27 no.9:125-130 S'63 (MIRA 17:2)

1. Iz Irkutskogo gosudarstvennogo meditsinskogo instituta.



GRUSHKO, Yakov Mikhaylovich, prof.; KHAMIDULLIN, R.S., red.

[Chromium compounds and the prevention of poisoning by  
them] Soedineniia khroma i profilaktika otravlenii imi.  
Moskva, Izd-vo "Meditsina," 1964. 303 p.

(MIRA 17:5)

GRUSHKO, Ya.M., prof.

Regional water line for the Irkutsk-Cheremkhovo industrial  
complex. Vod. i san. tekhn. no.6:19-21 Ja '64 (MIRA 18:1)

GRUSHKO, Ye.M.

Effect of aluminum compounds on fishes and their food supply.  
Otkrytiye. zhur. 3 no. 3455-59 '65.

(MIRA 1966)

1. Irkutskiy gosudarstvennyy meditsinskiy institut.

MURIN, A.N.; BANASEVICH, S.N.; GRUSHKO, Yu.S.

Diffusion of calcium ions in mixed NaCl-~~Ca~~ Cl<sub>2</sub> crystals.  
Fiz. tver. tela 3 no.8:2427-2433 Ag '61. (MIRA 14:8)

1. Leningradskiy gosudarstvennyy universitet im. A.A. Zhdanova.  
(Diffusion) (Calcium) (Chlorides)

GRUBINOV, V. S.

21663 GRUBINOV, V. S. Raschet na zhestkost' balok peremennogo sosheniya.  
V sbi Issledovaniya po teorii soobuzheniy. Vyp. 4, M.-L., 1949,  
s. 238-40.

SO: Letopis' Zhurnal'nykh Statey, No. 29, Moskva, 1949

GRUSHKOVA, T.

Necessary and sufficient condition of the representability of the equation  $z = f(x, y)$  in the form of a 4th nomographic order Clark-type equation, and a method of finding the elements of Massau determinants for it. Uch. zap. MGPI 96:239-258 '60.

(MIRA 16:7)

(Differential equations)  
(Nomography (Mathematics))  
(Determinants)

S/169/63/000/001/003/062  
D218/D307

AUTHOR: Grushkova, Yaroslava

TITLE: Results of ionospheric measurements in 1959

PERIODICAL: Referativnyy zhurnal, Geofizika, no. 1, 1963, 9,  
abstract 1A38 (In collection: Rezul'taty geomagnitn.,  
tellurich. i ionosfern. izmereniy, proved. v observ.  
Prugonitse, Budkov i Panska Ves v 1959 g. Praga,  
Chekhosl. AH, 1962, 149-151 (Rus.) 154-156 (Eng.))

TEXT: Tabulated results are reported of the following  
observations: (1) sudden ionospheric disturbances at 2.61 and 1.78  
Mc/sec, sudden enhancements of atmospheric at 27 kc/sec, and sudden  
phase anomalies at 155 kc/sec, (2) coefficient of conversion of  
radiowaves at 272 kc/sec, (3) atmospheric, (4) whistlers, and (5)  
vertical sounding of the ionosphere.  
[Abstracter's note: Complete translation]

Card 1/1





AUTHOR: Grushkovich, L., Abstractor

112-3-13/14

TITLE: The Use of Television Methods in Instrument Making  
(Primeneniye televizionnykh metodov v priborostroyenii)

PERIODICAL: Priborostroyeniye, 1958, Nr 3, pp. 30-31 (USSR)

ABSTRACT: The present work is an abstract of an article by H. R. Loos, Sdélovaci Technika, 1957, Nr 2, p 51. Television transmission of processes to be investigated or controlled guarantees the following

- 1) Simultaneity of observation.
- 2) Generous and immediate regulation of the picture contrast.
- 3) Wide spectral band.
- 4) Wide aiming-point offsets.

Morgan and Sturm connected an x-ray apparatus and a television surveying camera unit and thus, achieved a 1000 - 3000 fold increase of brightness.

Moon uses a photo-electric cell regulating the brightness of a Braun tube by means of an amplifier. For the determination of the location of material faults Sokolov uses an ultrasonic beam penetrating into the object to be investigated

Card 1/2

The Use of Television Methods in Instrument Making

119-3-13/14

and impinging on a piezo plate. On this plate a distribution of charge corresponding to the ultrasonic field is produced. The plate forms the end of a Braun tube. The thus obtained impulses are used for the regulation of a second Braun tube on which the processes are observed. The Yang microscope operates in similar way. There are 7 figures.

AVAILABLE: Library of Congress

1. Instruments--Design 2. Television--Applications

Card 2/2

GRUSHKOVSKIY, V.I. [Hrushkovs'kyl, V.I.]

Induction heat dryer for the drying of rubber compound ingredients.  
Khim.prom. [Ukr.] no.2:80-81 Ap-Je '65.

(MIRA 18:6)

GRUSHMAN, Roman Petrovich; DUBNETSKIY, K.N., kandidat tekhnicheskikh nauk, nauchnyy redaktor; KAPLAN, M.Ya., redaktor izdatel'stva; PUL'KINA, Ye.A., tekhnicheskiiy redaktor

[Industrial methods for heat insulation of pipes by means of mineral wool] Industrial'nyi sposob teploizolatsii truboprovodov mineral'noi vatoi. Leningrad, Gos. izd-vo lit-ry po stroit. i arkhitekture, 1956. 26 p. (MIRA 9:12)

(Steam pipe coverings)

GRUSHMAN, Roman Petrovich; DNEPROVA, N.N., red.; ROZOV, L.K., tekhn.  
red.

[Accident prevention in installing heat insulation] Tekhnika  
bezopasnosti pri teploizoliatsionnykh rabotakh. Leningrad,  
Gosstroizdat, 1963. 64 p. (MIRA 16:5)  
(Insulation (Heat))—Safety measures)

GRUSHMAN, Roman Petrovich; LOBANOVA, K.I., inzh., retsenzent;  
REZNIKOV, M.V., inzh., retsenzent; RAUSH, O.I., nauchn.  
red.; PENOVA, Ye.M., red.; SHISHKOVA, L.M., tekhn.red.

[Ship insulation specialist] Sudovoi izolirovshchik. Le-  
ningrad, Sudpromgiz, 1963. 149 p. (MIRA 17:3)

GRUSHMAN, R.P.

Experience with insulating heating pipelines with foam concrete.  
Stroi.prom. 34 no.4:43 Ap '56. (MLRA 9:8)

1. Glavnyy inzhener Leningradskogo upravleniya tresta Stroytermo-  
isolyatsiya.

(Pipelines) (Insulation (Heat))

GRUSHMAN, Roman Petrovich; DUBENITSKIY, K.N., kand.tekhn.nauk, nauchnyy  
red.; KAPLAN, M.Ya., red.izd-va; ROZOV, L.K., tekhn.red.

[What a heat-insulation installer should know] Chto nuzhno znat'  
teploizolirovshchiku. Leningrad, Gos.izd-vo lit-ry po stroit.,  
arkhit. i stroit.materialam, 1959. 102 p. (MIRA 13:3)  
(Insulation (Heat))



GRUSHMAN, Roman Petrovich, inzh.; YASHINA, Ada Gavrilovna; KONAROVSKIY,  
M.F., red.; FOMICHEV, A.G., red. izd-va; GVIRTZ, V.L., tekhn.  
red.

[Asbestos-paper cord; practice in the manufacture and use of  
the new heat-insulating material] Asbestobumazhnyi shnur;  
opyt izgotovleniia i primeneniia novogo teploizolatsionnogo  
materiala. Leningrad, 1962. 8 p. (Leningradskii Dom nauchno-  
tekhnicheskoi propagandy. Obmen peredovym opytom. Seriya:  
Stroitel'naia promyshlennost', no.1) (MIRA 15:3)  
(Asbestos) (Insulation (Heat))

GROSHAN, A.P., inch.

Insulating walls with reinforced mineral-wool mats. Mont. 1 spec.  
rab. v stroi. 24 no.1:29 Ja '62. (MIRA 15:7)  
(Mineral wool)

GRUSHMAN, Roman Petrovich

[What the worker engaged in heat insulation should know]  
Chto nuzhno snat' teploizolirovshchiku. 2. izd., perer.  
1 dop. Leningrad, Stroiizdat, 1965. 111 p.  
(MIRA 18:6)

SHCRYGINA, N.N.; MIKHAYLOV, N.P.; GRUSHNIKOV, O.P.

Obtaining some modified preparations of hydrochloric-acid lignin.  
Zhur.prikl.khim. 37 no.1:170-176 Ja. '64. (MIRA 17:2)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo.

GRUSHNIKOVA, L.P.; SMIRNOV, G.N.

[Improvement of safety measures and hygienic conditions  
for work on the reving machines in flax spinning  
industries] Uлучshenie tekhniki bezopasnosti i sanitarno-  
gigienicheskikh uslovii truda na rovnichnykh mashinakh  
l'nopriadil'nogo proizvolstva. Ivanovo, 1963. 31 p.

(NII 17:8)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut ohrany  
truda.

GRUSHOVSKI, M.

"Industrialization in Slovakia", P. 58., (TESHKA PROMISHLENCST, Vol. 3,  
No. 10, 1954, Sofiya, Bulgaria)

SO: Monthly List of East European Accessions, (SEAL), LC, Vol. 4,  
No. 6, June 1955, Uncl.

CHUKSANOVA, A.A.; GRUSHNIKOV, O.P.; SHORYGINA, N.N.

Study of nitrolignin inhomogeneity. Izv.AN SSSR.Otd.khim.nauk  
no.10:1810-1812 0 '61. (MIRA 14:10)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.  
(Nitrolignin)

GRUSHVITSKAYA, M.K.; GRUSHVITSKIY, I.V.

Anatomy and biology of ginseng. Mat. k izuch. zhen'-shenia i  
lim. no.2:19-34 '55. (MLRA 9:10)

(GINSENG)



GRUSHVITSKAYA, M.K.; GRUSHVITSKIY, I.V.; GUTR. KRYA, Z...

Implantation of the surface shoots and leaves of ginseng.  
Mat. k izuch. zhen'. i drug. lek. rast. Dal'. Vest. no.5:  
39-43 '63. (MIRA 17:8)

1. Botanicheskiy institut AN SSSR i Dal'nevostochnyy filial  
Imeni Komarova Sibirskogo otdeleniya AN SSSR.

GRUSHVITSKAYA, O. N.

AID P - 1532

Subject : USSR/Electricity

Card 1/1 Pub. 26 - 28/36

Author : Grushvitskaya, O. N., Eng.

Title : Experience with routine test of underground power lines

Periodical : Elek. sta., 3, 57 - 58, Mr 1955

Abstract : The author describes periodical tests which have been introduced since 1943 in one of the power systems. This measure resulted in a considerable reduction of faults. The author presents comparative data and three graphs.

Institution: None

Submitted : No date

GRUSHVITSKAYA, O.N., inzhener.

Cleaning insulators. Elek.sta.27 no.6:61 Je '56.  
(Electric insulators and insulation) (Ceresin)

(MIRA 9:9)

GRUSHVITSKAYA, O.N., inzhener.

On the level for testing voltage and the periodicity of testing  
generators with worn insulation. Elek. sta. 28 no.6:91-92 Je '57.  
(Electric generators) (MIRA 10:8)

GRUSHVITSKAYA, O.N., inzh.

Concerning the operation of a turbogenerator with "ground" in  
the stator winding. Elek. sta. 33 no.6:77-78 Je '62.  
(MIRA 15:7)

(Turbogenerators)

1. A. I. V. V.
2. USSR (600)
4. Species, Origin of - Far East
7. Mountain river valleys as arenas of species formations. Inv. Vses. geog. ob-va  
79, No. 3, 1947.

9. Monthly List of Russian Accessions, Library of Congress, May 1953. Unclassified.

GRUSHVITSKIY, I. V.

2/49T78

USSR/Medicine - Plants  
Medicine - Tropism

Jun 48

"Negative Geotropism of Roots of the Cinnamon Fern  
on a Survey in the Ussuri Range," I. V.  
Grushvitskiy, - 1/2 p

"Priroda" No 6

Briefly discusses this phenomenon which is seldom  
found, and then usually only in tropic regions.

2/49T78

GRUSHIVITSKIY, I. V.

Grushivitskiy, I. V. "On the vertical disjunctions in the distribution of vegetation," Uchen. zapiski (Leningr. gos. ped. in-t in. Pokrovskogo), Vol. VI, 1949, p. 99-110 - Bibliog: 30 items

SO: U-3750, 16 June 53, (Letoris 'Zhurnal 'nukh Statev, No. 5, 1949).



GRUSHVITSKIY, I. V.

33068

Muzey Dostizheniy I. V. Michurina (G. Michurinsk). Botan. Zhurnal, 1949, No. 5,  
S. 552-58

SO: Letopis' Zhurnal'nykh Statey, Vol. 45, Moskva, 1949

*Botanical Inst. im. V L Komarov Acad. Sci. USSR*

GRUSHVITSKIY, I. V.

Jan/Feb 49

USSR/Medicine - Botany, History  
Medicine - Societies, Medical

"Brief Resume of the Work of the Third Conference on the History of Flora and  
Vegetation of the USSR (20-25 January 1948)," B. A. Tikhomirov, A. Fedorov, I. V.  
Grushvitskiy, 15 pp

"Botan Zhur" Vol XXXIV, No 1

Conference was well attended by representatives of various botanical institutions.  
Various reports on historical aspects of the study of botany in the USSR were submitted.

PA 42/49T61

GRUSHVITSKIY, I. V.

600

1. GRUSHVITSKIY, I. V.; IVANINA, L. I.

2a. USSR (600)

4. Biology - Exhibitions

7. For the popularization of Michurin's Teachings; a new exhibition "The Leading Michurin Biology" in the museum of the Botanical Institute of V. L. Komarov, Academy of Sciences of the USSR Bot. zhur., 37, No. 1, 1952. Botanicheskiy Institut im. V. L. Komarova Akademii Nauk SSSR Leningrad  
Recd. 11 Oct. 1951

9a. Monthly List of Russian Accessions, Library of Congress, April 1952.  
UNCLASSIFIED

1. GRUSHVITSKIY, I. V.
2. USSR (600)
4. Roots (Botany)
7. Contractile roots are an important biological particularity of ginseng (Panax ginseng C. A. M.) Bot. zhur. 37, No. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

GRUSHVITSKIY, I.V.

Remarks on the article of Hsia Wei-ying. Bot.zhur. 39 no.3:457-459  
My-Je '54. (MLRA 7:7)

1. Botanicheskiy institut im. V.L.Komarova Akademii nauk SSSR,  
Leningrad.  
(Hsia, Wei-ying) (Ginseng)

GRUSHVITSKIY, I. V.

USSR/ Biology - Botany

Card 1/1 : Pub. 86 - 7/36

Authors : Grushvitskiy, I. V., and Gutnikova, Z. I.

Title : Ginseng

Periodical : Priroda 43/8, 55-61, Aug 1954

Abstract : Some history is given of the use of ginseng, a plant found only in the eastern part of Siberia. The botanical facts relating to this plant are discussed. An account is also given of extensive research conducted by Soviet scientists with the root of ginseng, which showed that remedies prepared from this root have a definite beneficial effect as a tonic on the human organism. Illustrations; drawings.

Institution : ...

Submitted : ...

GRUSHVITSKIY, I.V.

Panax ginseng C.A.Mey. is the real name of ginseng. Mat. k  
isuch. zhem'-shenia 1 lim. no.2:13-18 '55. (MIRA 9:10)

(GINSENG)

GRUSHVITSKAYA, M.K.; GRUSHVITSKIY, I.V.

Anatomy and biology of ginseng. Mat. k izuch. zhon'-shenia 1  
lim. no.2:19-34 '55. (MLBA 9:10)

(GINSENG)



GRUSHVITSKIY, I.V.

Ginseng diseases; survey of literature. Mat. k izuch. zhem'-shenia  
i lim. no.2:35-70 '55. (MLRA 9:10)

(GINSENG--DISEASES AND PESTS)

GRUSHVITSKIY, I.V.

Variability in the arrangement of ginseng leaves. Soob. DVTAN SSSR  
no.7:39-47 '55. (MIRA 10:4)

1. Botanicheskiy institut im. V. L. Komarova AN SSSR.  
(Ginseng) (Leaves)

GRUSHVITSKIY, I.V.

Planklike roots of the white-barked elm (*Ulmus propinqua* Koidz.)  
Soc. DVFAN SSSR no.7:70-75 '55. (MLBA 10:4)  
(Maritime Territory--Elm) (Roots (Botany))

GRUSHVITSKIY, I V.

Effects of ginseng on microorganisms. V. G. Grament-skaya and I. V. Grushvitski (V. L. Komarov Botan. Inst., Leningrad). *Mikrobiologiya* 25, 221-8(1958).—Liquid from young ginseng roots or sprouts is an active protistocidal and rapidly inactivates or kills protozoa (*Glaucoma scintillans*). *med*

Tests with bacterial cultures (*Bacillus megatherium*, *Serratia marcescens* and organisms of garlic root) showed that both the volatile fractions and the root liquid are stimulants. Infusions in aq. alc. from leaves, blossoms and rootlets had bactericidal activity, while infusions from the main root, dried sprouts and stems acted as mild stimulants.

Julian F. Smith

2